



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON  
4551 LLEWELLYN AVENUE, SUITE 5000  
FORT GEORGE G. MEADE, MARYLAND 20755-5000

IMND-MEA-PWE

April 9, 2014

MEMORANDUM FOR Restoration Advisory Board Members

SUBJECT: Minutes for the March 20, 2014 Restoration Advisory Board Meeting

1. The Restoration Advisory Board (RAB) meeting was held on March 20<sup>th</sup>, 2014, at 7:00 p.m. at the Holiday Inn Express located at 7481 Ridge Road, Hanover, Maryland, 21076. The next RAB meeting will be **Thursday, May 15<sup>th</sup>, 7 p.m.**, at the Holiday Inn Express, 7481 Ridge Road, Hanover, Maryland, 21076.

2. The following RAB members were present:

Mr. John Burchette, U.S. Environmental Protection Agency  
Mr. Mick Butler, Fort Meade Co-Chair  
Ms. Kellyann Few, Provisional Community Member  
Mr. Paul Fluck, Fort Meade Restoration Manager  
Mr. Martin Madera, Community Member  
Mr. David Tibbetts, Community Co-Chair  
Mr. Brian Chew for Ms. Kerry Topovski, Anne Arundel County Health Dept.  
Mr. Fred Tutman, Community Member

3. Members not present:

Mr. Rusty Bristow, Community Member  
Mr. Wayne Dixon, Community Member  
Ms. Laura Ann Hutchinson, Provisional Community Member  
Mr. Harry Neal, Community Member  
Mr. Howard Nicholson, Community Member

4. Others present were:

Mr. Steve Cardon	Versar, BRAC Program
Mr. Walt Chahanovich	Fort Meade, Office of SJA
Ms. Sherry Deskins	Architect of the Capitol
Mr. Bill Eaton	URS
Ms. Sarah Gettier	URS
Ms. Elisabeth Green	Maryland Department of the Environment
Ms. Katrina Harris	Bridge Consulting Corp.
Mr. Jerry Kashatus	URS

Ms. Erin McKinley	Fort Meade Environmental Division (Osage of Virginia)
Ms. Shelly Morris	ARCADIS
Mr. Dan Sheehan	ARCADIS
Mr. Keith Sheppard	ARCADIS
Mr. Alex Smith	CBI
Ms. Denise Tegtmeier	Fort Meade Environmental Division (Osage of Virginia)

5. Announcements and Minutes:

a. Mr. Paul Fluck welcomed everyone, and Mr. David Tibbetts called the meeting to order. Mr. Fluck invited all present to introduce themselves and sign in.

b. Mr. Tibbetts made a motion to approve the January 16<sup>th</sup>, 2014 meeting minutes. The motion was seconded and unanimously adopted to approve the January 16<sup>st</sup>, 2014 minutes.

c. Mr. Fluck announced this meeting would be his last as he had accepted an assignment with the Mobile, Alabama office of the Corps of Engineers. Mr. Fluck stated his tenure at Fort Meade has been his single, best professional experience, and his work with his colleagues and Board members has been the most impactful of his career. Mr. Fluck thanked all those present for giving him that opportunity to make a difference, particularly his boss, Mr. Mick Butler. Mr. Tibbetts expressed his appreciation for the opportunity to work with Mr. Fluck and his professionalism and analytical skills. Mr. Butler recognized Mr. Fluck for his dedication to Fort Meade's environmental issues and his calm, analytical approach to whatever issues arose. Mr. Butler stated Mr. Fluck would be greatly missed.

d. Mr. Fluck advised that Mr. Kurt Riegel had submitted his resignation effective that day. Mr. Fluck stated that Mr. Riegel had brought a great deal of expertise and clarity to many issues. Mr. Fluck expressed Fort Meade's appreciation for Mr. Riegel's service as a community member of the Board, and the Board members echoed Mr. Fluck's expression of appreciation. Mr. Fluck noted that Fort Meade continues to solicit new members through public notices and press releases on upcoming Board meetings.

6. Old Business:

a. Mr. Fluck stated that Mr. Tibbetts had requested information providing a look at the "big picture" of the environmental program. Mr. Fluck said he thinks it would be best to provide that information in a multi-step process. He explained he would be providing some overall Department of Defense information tonight and information specific to Fort Meade would be provided at the next meeting.

i. Mr. Fluck stated the amount of money spent by the Department of Defense on environmental programs can be found in an annual report to Congress which is available on the Internet; he suggested using Google to locate a copy. Mr. Fluck said according to the 2012 report (the most current report available to the public), the Department of Defense obligated \$4.1 billion for environmental programs--\$2 billion for restoration activities, \$1.9 billion for

environmental quality activities, and about \$213 million for environmental technology. Mr. Fluck advised that from 1975 through 2012, including the installation restoration and military munitions response program, for the active and Base Realignment and Closure Act (BRAC) sites (both disposal and realignment costs), Fort Meade had received more than \$110 million. Mr. Fluck stated Fort Meade has a large program that will grow, and said while he cannot speak to the amount of future funding, Fort Meade does have several projects that are quite substantial in size so a considerable amount of money will be expended in meeting Fort Meade's objectives.

ii. Mr. Fluck explained two of the "big picture" objectives are remedy in place, which means a system has been constructed and is properly operating, and response complete which is when all the cleanup actions are complete and remedial action objectives have been met, although monitoring may still be occurring. Mr. Fluck said as of 2012 the Department of Defense had about 38,000 restoration sites (includes active, BRAC and Formerly Used Defense Sites) with 29,000 either complete or in long-term monitoring status. He noted the original goal in 2012 was to reach remedy in place for 95% of the sites by 2014, but that goal has been revised. He said at that time there were 31,000 sites with approximately 27,000 or 86% meeting the remedy in place goal. Mr. Fluck explained the easy sites get to remedy in place first, while the more complex sites are still under investigation or cleanup and will take longer to reach remedy in place. Mr. Fluck said the revised goals are to achieve response complete at 90% of the sites by 2018 and 95% by 2021. Mr. Fluck said of the 38,000 sites, 77% had reached response complete in 2012.

b. Mr. Fred Tutman expressed interest in seeing when and how the environmental cleanup program got started. Mr. Fluck provided some background information, noting the bulk of the program got underway in the mid-1980s. He stated in the early years the program was more response driven and not focused on an overall assessment of possible sites and their cleanup. Mr. Butler suggested the Installation Action Plan is a good document for the type of information Mr. Tutman is looking for as it contains both a look back and a projected future timeline.

c. Mr. Tibbetts asked about an individual's application for Board membership, and Mr. Fluck stated he had not yet received the application.

#### 7. Update on Proposed Plan for Architect of the Capitol Site:

a. Mr. Fluck introduced Mr. John Cherry of ARCADIS, a contractor to Fort Meade's environmental program.

b. Mr. Cherry reviewed an outline of his presentation and noted he would be discussing where the site is in the Comprehensive Environmental Restoration, Compensation and Liability Act (CERCLA) process, the site location and history, field investigations, a summary of the remedial investigation work and findings, risk assessment results, the feasibility study and the alternatives assessed, the proposed plan, the next anticipated steps, and the Record of Decision.

c. Mr. Cherry displayed a list of the key phases of the (CERCLA) process. He stated one of the early phases is the Remedial Investigation where the site characterization is done to define the nature and extent of contamination through activities such as sampling and vapor intrusion work. Mr. Cherry said all that work is done under EPA and Maryland Department of the Environment oversight which allows the Army and stakeholders to reach an understanding of what the problems are at the site. He noted the next step, the Feasibility Study, looks at possible remedies once the nature of contamination is known. Mr. Cherry said the Remedial Investigation Report for this site was completed in April 2013, and a draft final of the Feasibility Study has been completed and sent to the regulators the prior month. Mr. Cherry said the next phase is an important one, the Proposed Plan phase, as this is where there is formal public input on the proposed remedies. He noted public input is sought before a final decision is made on the remedy, and comments are documented in the Record of Decision. He advised the remedy documented in the Record of Decision is then designed and implemented. .

d. Mr. Cherry displayed an aerial photograph of Fort Meade and pointed out the location of the Architect of the Capitol, at the southern edge of Fort Meade along Route 32. He stated it is a 93-acre parcel. Mr. Cherry pointed out the location of the Library of Congress storage facility located on the site.

e. Mr. Cherry advised that when the Army owned the property it was used for diverse purposes, including warehouses and storage, a transportation motor pool facility on the western side, and other areas used for storage of trailers and other purposes. He stated the property was transferred to the Architect of the Capitol in 1994. He noted since 1994 the Architect of the Capitol constructed the Library of Congress, has some other warehouse and storage facilities, and leases the transportation motor pool area back to the Army.

f. Mr. Cherry presented a brief overview of the field investigations. He stated the work conducted under the remedial investigation was done over decades through an iterative process as the understanding of the site conditions were refined and data gaps were addressed. Mr. Cherry noted the bulk of the field work was finished in 2011 with all the data then being used to prepare the remedial investigation report and the human health risk assessment. He stated those reports were distributed to the Board and are available for review.

g. Mr. Cherry next discussed the soil investigation, noting the soil initially was sampled for a wide variety of potential contaminants based on historical uses. He advised lead was the only constituent identified as a potential contaminant of concern in the soil across the parcel, primarily based on one lead detection in a small area. Mr. Cherry said soil sampling in 2004 identified one detection at depth at 3,500 parts per million compared to a residential standard of 400 parts per million. He noted extensive sampling, about 175 samples, was done a few years later to ensure the area was fully delineated. He said the samples were collected from four feet down to 14 feet below ground surface. Mr. Cherry showed photographs of the area where the lead was detected, in the center of the property. He noted it is a fairly small area, approximately 60 feet by 68 feet, less than .10 of an acre. Mr. Cherry reiterated that the lead detections in the soil were at depth and in a very small area. He noted it was not until a depth of seven to 10 feet that the detections were fairly elevated; the highest detections were 6,800 parts per million and

5,200 parts per million at a depth of 7 feet below ground surface and 3,300 parts per million and 5,600 parts per million at a depth of 10 feet below ground surface. He said when the exposure values are calculated the numbers are just slightly above the residential use scenario, although there is no current or planned residential use of the area. He stated the assessment found there is no risk from lead in soil under any current or reasonably anticipated future use. Mr. Cherry advised the proposed remedy is to excavate and remove the soil with the high concentrations of lead.

h. Mr. Marty Madera asked what raised the initial concern that an investigation needed to be conducted at the site. Mr. Fluck responded that Fort Meade's Solid Waste Management Unit assessment captured not just the buildings that were located across the entire installation but also locations where there was some type of regulated chemical stored, transferred or mixed. He said the assessment looked at buildings which had these types of activities and then looked for any indications there might be potential environmental releases.

i. Mr. Cherry next discussed the groundwater. He stated an extensive evaluation of the site groundwater had been conducted through a network of monitoring wells and direct push technology to sample for various constituents. Mr. Cherry said Operable Unit 5 is to the west of this site and Operable Unit 4 is to the east, and both of those sites have solvent plumes from known sources that flow under and just clip the Architect of the Capitol property. He noted the groundwater issues from Operable Units 4 and 5 are being handled under separate actions.

j. Mr. Cherry said the main impact to groundwater at the site is from metals in the shallow groundwater. He emphasized that groundwater at the site is not being used for drinking water purposes so there is no current risk concern. Mr. Cherry said there are no known source areas for the metals detected in the groundwater, and the concentrations are comparable to upgradient background samples. He explained the metals driving the risk are arsenic, chromium, cobalt and aluminum, and these metals are naturally occurring. Mr. Fluck added that the four metals are probably the most common metals found in groundwater on Fort Meade. Mr. Cherry said under current use conditions there is no risk to human health or the environment. He noted there is no likely change for future use, but there are some hypothetical future uses which result in a risk. He explained that if groundwater was used for drinking water, there would be an unacceptable risk. He said another scenario would be if the site was re-graded to allow for exposure to soils at seven or ten feet deep, then there would be unacceptable risks for hypothetical residents or commercial workers; however, the risk would be limited to very small areas. Mr. Cherry advised that the risks posed under the hypothetical future use scenarios led to the evaluation of potential remedies in the Feasibility Study.

k. Mr. Cherry explained the Feasibility Study uses nine criteria to evaluate potential remedies--overall protectiveness of human health and the environment; compliance with applicable or relevant and appropriate requirements; long-term effectiveness and permanence; reduction of toxicity, mobility or volume of contaminants through treatment; short-term effectiveness; implementability; and cost. He continued explaining the last two criteria--state acceptance and community acceptance--are modifying criteria and occur later in the process.

l. Mr. Cherry advised the Feasibility Study is under review by the regulatory agencies and evaluates two options for the metals in the groundwater--no action or land use controls with long-term monitoring. He noted the levels are low and comparable to upgradient concentrations coming onto the property, there are no known sources, and there is no discernible plume. Mr. Cherry reiterated there is no current exposure to the groundwater. Mr. Cherry said land use controls and long-term monitoring is the alternative recommended.

m. Mr. Cherry reviewed the three options evaluated in the Feasibility Study for lead in the soil. He said the three options were: no action, land use controls to prevent access or excavation, and hot spot excavation and disposal of the contaminated soil which is the recommended option.

n. Mr. Cherry displayed a chart highlighting the two small areas to be excavated. He explained more details on the excavation would be in the Proposed Plan, and then if the option is selected as the final remedy, in the Record of Decision and Remedial Design. He explained there would be no need for land use controls after the hot spot excavation.

o. Mr. Cherry reviewed the schedule for the site and noted the draft Feasibility Study and Proposed Plan were submitted to the regulatory agencies and the Board in February and March respectively. He said the tentative timeframe is for a public meeting on the Proposed Plan later in the spring, followed by a Record of Decision in June or July.

8. Update on the Nevada Avenue Investigation:

a. Mr. Fluck introduced Ms. Shelly Morris of ARCADIS.

b. Ms. Morris advised the Board the objective of the work plan is to determine if Fort Meade is responsible for the tetrachloroethylene (PCE) detected in three Nevada Avenue private wells. She explained activities in the work plan included installing five deep and two optional shallow wells, conducting two rounds of groundwater sampling of those wells, collecting two rounds of groundwater levels to determine the flow of groundwater, conducting background research on potential sources, sampling the private wells on a monthly basis, extending bottled water service to the three residences, and reporting the findings.

c. Ms. Morris showed a chart of the sampling results for the last 12 months for the three private wells on Nevada Avenue. She stated there is some fluctuation, and all three wells exceeded the maximum contaminant level for PCE in January and July. She noted it is not a significant amount of fluctuation, and the levels hover around the maximum contaminant level. Ms. Morris showed another chart going back to the beginning of the study in 2009.

d. Ms. Morris said she would next be discussing the document she had distributed earlier to the Board members. She informed the Board historical research had been done through Environmental Database Review. She stated a one-mile search had been conducted, and no documented PCE releases were found. She said they did identify PCE use for former/active dry cleaning businesses that have or had permits in the upgradient area. Ms. Morris stated a review

of historical topographic maps and aerial photographs was conducted, and no evidence of disposal pits or industrial disposal was seen. She noted businesses began appearing in the area in 1947. Ms. Morris advised that upgradient sites within Fort Meade's Installation Restoration Program were reviewed, and two sites were identified where PCE had been detected. She said one site was Solid Waste Management Unit 77, which is still in the Site Investigation phase. She advised PCE was detected once at this site at a very low level. Ms. Morris said the second site was Operable Unit 3, the former Nike Missile Site, which is in the Remedial Investigation phase. Ms. Morris said it had been determined that PCE for these two sites was not migrating off of Fort Meade.

e. Ms. Morris displayed an aerial photograph and pointed out the location of the private wells on Nevada Avenue and Operable Unit 3.

f. Ms. Morris noted that Maryland Department of the Environment's Voluntary Cleanup Program records were reviewed, and one site where PCE had been detected in 2000-2001 was found downgradient of Nevada Avenue. She stated Nevada Avenue had been included in that study, and thus there was some historical data that also was reviewed. Ms. Morris said a Certificate of Completion was issued for the site. She concluded that because the site was downgradient, it was not determined to be a contributor to the Nevada Avenue issue.

g. Ms. Morris said no upgradient sites were found in the Maryland Department of the Environment Land Restoration Program. She advised a request for data from all divisions of Maryland Department of the Environment had been filed, and the data will be reviewed on March 24.

h. Ms. Morris stated the rights of entry and lease agreements had been finalized for the parcels where the wells were to be drilled. She advised there was some public outreach done in conjunction with Fort Meade's Public Affairs Office including news releases and a fact sheet; door-to-door visits were also conducted with nearby homeowners just prior to the drilling of the wells. Ms. Morris said the on-post and off-post wells had been installed in May and June 2013, followed by two rounds of sampling in July 2013 and September 2013. She explained synoptic groundwater measurements of 23 wells was also performed, including the new wells, to determine the groundwater flow. She stated all the data was in the draft report which she had just distributed.

i. Ms. Morris showed several photographs of the wells being installed.

j. Ms. Morris displayed an aerial photograph and pointed out the locations of the new wells.

k. Ms. Morris reviewed the most recent groundwater sampling results. She advised there were no PCE detections in the new wells on Fort Meade or in the Berger Street well. She said PCE was detected at levels exceeding the maximum contaminant level in both sampling rounds at the Blue Water Street well, and at levels below the maximum contaminant level in the Nevada Avenue well. She stated the monthly sampling of the tap water at the three residences

on Nevada Avenue was conducted at the same time, and there were similar results for those wells.

l. Ms. Morris displayed a chart showing the sampling results. She explained the highest detection was 10.5 parts per billion on Blue Water in July followed by 7.8 parts per billion detection in September. She stated the detections in the Nevada Avenue well were 4.0 parts per billion and 1.5 parts per billion.

m. Ms. Morris displayed aerial photographs showing the groundwater sampling and gauging results. She stated groundwater is flowing towards the southeast.

n. Ms. Morris summarized the results of the field investigation. She stated PCE is commonly used in dry cleaning and as degreaser and explained the PCE detected is indicative of PCE associated with dry cleaning activities. She reiterated the historical document review did not find any documented spills but did find permitted use. She stated there was one voluntary cleanup that occurred downgradient. Ms. Morris said a review of additional Maryland Department of the Environment files will be conducted on March 24.

o. Ms. Morris summarized the groundwater data by stating the groundwater flow is towards the southeast. She stated there were no detections in the on-post wells or the Berger Avenue well. Ms. Morris said the wells with detections are in line with one another in terms of the groundwater flow direction.

p. Mr. Tibbetts advised the owner of a nearby computer store had indicated behind the pizza store there had been a former dry cleaning business, and PCE contamination had been found nearby during boring studies for the highway expansion. Mr. Tibbetts pointed out the location on a map.

q. Ms. Morris said the field investigation and data concludes the source of the PCE is coming from a northwestern location and not from Fort Meade. She said the final step in the project would be to finalize the draft report recently distributed. She advised the private well sampling would continue until March 2015. Ms. Morris said there would be communication with the public once everyone is in agreement with the report.

r. Mr. Tibbetts asked for confirmation that Fort Meade is not responsible for the PCE contamination in the Nevada Avenue wells. Mr. Fluck responded that the weight of evidence based on the data collected is heading towards the conclusion that the Army is not responsible. Mr. Fluck said the Army is waiting on input from the regulators and the community members on the data in the report. Mr. Butler added that input from the regulators and their technical experts is important for the Army to receive before deciding the next steps. He said if in fact the regulators concur that the issue is not an Army issue, there will be discussion on how to hand off the problem. He said the Army does not want to walk away until that conversation occurs which is why the contract provides for sampling through March 2015 if needed.

#### 11. Update on Trap and Skeet Range:



a. Mr. Fluck introduced Mr. Bill Eaton from URS Corporation, a contractor to Fort Meade's BRAC program.

b. Mr. Eaton stated he would be discussing the multi-incremental sampling recently done at the Trap and Skeet Range on the Patuxent Research Range North Tract. Mr. Eaton pointed out the site location on a map and noted the site consists of Trap Ranges (shown in red on the map) and a Skeet Range (shown in blue). He advised some maps from 1965 and 1984 showed two tree lines which were important features as they could potentially influence the distribution of lead on the ground.

c. Mr. Eaton gave a brief history of the site, noting the first environmental study of the site was in 2004 and was a combined effort with EPA and the U.S. Fish and Wildlife Service. He advised the 2004 study focused primarily on metals but also addressed PAHs to a limited extent. He noted URS conducted a study in 2010 which expanded the study of the metals and addressed lead not only spatially but vertically. He said they also recognized some of the reporting limits from 2004 based on XRF were slightly elevated for arsenic and antimony relative to the screening values so those constituents were also sampled for with lower reporting limits in the 2010 study. Mr. Eaton advised that in 2010 Maryland Department of the Environment requested an expanded investigation for PAHs, noting most of the historic samples were collected from distant locations, out where the lead falls which is far from the firing point. He explained further that the clay pigeon fragments tend to fall closer to the firing point. He said nitroglycerin sampling was also included in the 2010 study as it is a component of the shotgun firing. Mr. Eaton said the draft final Remedial Investigation/Feasibility Study Report was going to be submitted the next day, followed shortly thereafter by a draft of the Proposed Plan.

d. Mr. Eaton displayed an aerial photograph depicting the lead findings from the 2004 study. He explained the center concentrations of lead were in the range of 15,000 parts per million and taper off to 500 parts per million and then to the reporting limit. He continued explaining at that time there was no understanding of how deep the contamination went but the thinking was that it did not go very deep. Mr. Eaton displayed a series of aerial photographs showing the detections of lead at various depths--zero to three inches, three to six inches, six to nine inches, and nine to twelve inches. Mr. Eaton said he would not be reviewing the antimony and arsenic results at this meeting, but they are associated with the lead. He explained the antimony is a hardener used in the manufacture of lead shot, and arsenic is an additive for the purpose of rendering the lead spherical during the manufacturing process. He said if the lead is removed down to a reasonable standard, the arsenic will also be addressed.

e. Mr. Eaton began discussing multi-incremental sampling. He stated it was becoming a popular technique because the Army is dealing with ranges, and from a site assessment point of view, ranges can be very challenging in that the current contamination is very heterogeneous. He explained a sample from one location can show a result of 10 parts per billion, while a sample from three feet away shows a detection at 10,000 parts per billion. Mr. Easton said multi-incremental sampling is "composite sampling on steroids." He said a more formal definition is multi-incremental sampling is a structured composite sampling protocol meaning if

one were to collect samples of the meeting room, instead of taking a single discrete sample from the middle of the room, one might take 10 separate samples, combine them into one, and send that composite sample to the lab. He noted this type of sampling is performed in a very structured manner by setting up a grid and taking an incremental or small sample from the center of each grid, combining them, and sending them to the lab. Mr. Eaton stated the next part of the definition "processing protocol," means once the lab gets the composite sample, it follows a careful process to ensure the sample is representative, so they homogenize the entire sample, i.e., in the case of samples from the Trap and Skeet range, pulverizing the sample in a very careful manner because of the potential for volatilization.

f. Mr. Eaton advised the Interstate Technology & Regulatory Council (ITRC) had performed a substantial amount of modeling and their rule of thumb, which was used during the Trap and Skeet Range sampling, is to collect 30 to 100 increments as that level of homogenization will defeat the heterogeneous nature of any site. In response to a question from Mr. Fluck, Mr. Eaton explained this would mean one composite sample would have soil from 30 different locations. Mr. Eaton said a question with discrete sampling is typically how many samples are needed, and thus one needs to know the variability is in the media being sampled, which is never known. He stated the advantage of incremental sampling methodology is the modeling has empirically determined the 30 to 100 increments are sufficient to produce accurate results. He explained that practical considerations determine whether 30 or 100 increments are used, such as the presence of unexploded ordnance. Mr. Eaton said another consideration was input from the U.S. Environmental Protection Agency who said they would be more comfortable with 50 increments as compared to 30; therefore, 50 was used as the guideline at the Trap and Skeet Range.

g. Mr. Eaton explained incremental sampling is not always necessary. He said if a site is totally homogenous only site samples from anywhere are needed that will be representative of the site; for example, when a doctor draws blood from a person, they do not use incremental sampling because the one sample of blood is homogenous and representative of what is in a person's body. He gave another example of an oil spill where only one sample might be taken of the oil to learn about its components. Mr. Tutman asked what are the clues that might indicate a site has homogenous qualities. Mr. Eaton responded that it is probably easier to give an example of what is not a homogenous site; he stated a dump site might have piles of different color dirt, pits, and liquids from which a single sample would not provide adequate information about the chemistry of that dump site.

h. Mr. Eaton discussed the type of results gained from incremental sampling, and noted sometimes the methodology can produce bad results. He gave an example of where incremental sampling was done for 64 cells, and the result from the one composite sample showed a high arsenic concentration that led to a decision to excavate the area composed of the 64 cells. Mr. Eaton said in actuality the arsenic may only be a hot spot in a few of the 64 cells. He gave another example where the same scenario might miss a hot spot because of the composite sampling. Mr. Eaton explained the guidance for incremental sampling emphasizes the importance of knowing the site to arrive at a proper decision.

i. Mr. Eaton explained that incremental sampling was used for the PAH component at the Trap and Skeet Range to better estimate the PAH concentrations associated with the "chunky" heterogeneous nature of the site. He said chunks of target fragments are scattered across the site. He said another reason is that munition constituents are usually best assessed through incremental sampling. Mr. Eaton said the incremental sampling approach also reduced analytical costs. He said the most important consideration is that there was good existing knowledge of PAH and nitroglycerin contamination locations. He noted the knowledge was a result of visual clues, the scattered target fragments, and the fact that firing points were known.

j. Mr. Eaton showed an aerial photograph of the decision units. He said decision unit 1 is large and represents the area where most of the target fragments were seen lying on the ground, and it is down range from where the targets were hurled into the air before being shot and falling to the ground. Mr. Eaton said the hypothesis was that decision unit 1 was contaminated. Mr. Eaton said decision unit 4 was also thought to be potentially contaminated as there was some visual evidence of target fragments, not that they were shot there but people dropped them. Mr. Eaton said another factor is that once a decision unit was found to be contaminated, the question is what is the boundary for that contamination. He said for this reason decision units 2 and 3 were established on either side of decision unit 4, with a hypothesis that decisions units 2 and 3 would not be contaminated. Mr. Fluck asked why there was not a similar decision unit next to decision unit 1 to bound the contamination. Mr. Eaton responded that was existing knowledge about the portion of the site to the right of decision unit 1 that there was a need to remediate that area because of lead contamination. Mr. Eaton noted that decision unit 5 was the background unit; Mr. Eaton said they assumed they would find PAHs due to being in a forested area, and those PAHs levels would drive an unacceptable risk for conservative scenarios, such as residential. Mr. Eaton clarified that his slide should indicate the expectation was that decision unit 5 would be uncontaminated.

k. In response to a question from Mr. Fluck about the green dots on the photograph, Mr. Eaton said they were related to the lead investigation sampling and not the PAH sampling.

l. Mr. Eaton displayed aerial photographs showing two decision units for nitroglycerin, decision units 6 and 7, for each of the two firing points associated with the ranges. He said the hypothesis was that they were probably not contaminated, so bounding units were not done around decision units 6 and 7.

m. Mr. Eaton showed a diagram of decision unit 6 with the locations of the discrete sample collection; he advised the coverage was similar for all of the decision units.

n. Mr. Eaton discussed a chart showing the increments collected. He stated 20 samples were sent to the lab. He noted there were two depth intervals for decision unit 1, zero to six inches and six inches to 12 inches. Mr. Eaton advised a total of 1,000 increments were collected.

o. Mr. Eaton reviewed what occurred at the lab once the samples were received. He explained the samples are air dried, sieved, ground, and the temperature monitored. He said the

powered dirt is then laid out and 30 increments are collected for analysis. Mr. Eaton showed the analysis methods used for both PAH and nitroglycerin analysis.

p. Mr. Eaton next discussed the sampling results for nitroglycerin. He explained the results were 4.8 parts per million and 3.8 parts per million.

q. Mr. Eaton displayed the sampling results for PAHs. He reminded the Board the hypothesis was that decision unit one would be contaminated and it was, and decision units two and three were bounding units and were found to be clean as hypothesized. He pointed out the results for the background unit, decision unit 5, which was also found to be clean. He noted decision unit four has been impacted. He pointed out some of the discrepancies with the replicates but said the number are as reported. Mr. Fluck asked if there is anything in the guidance that discusses discrepancies such as those reported and if they constitute a "red flag," and Mr. Eaton agreed the discrepancies seem to be red flags.

r. Mr. Eaton concluded the incremental sampling seemed to have worked well with the PAH and nitroglycerin sampling.

s. Mr. Tibbetts asked if the report would be distributed to the Board. Mr. Steve Cardon responded the Board would continue to get data as it is received, and all the data would be rolled up into the Remedial Investigation/Feasibility Study and Proposed Plan. Mr. Cardon said these documents would be put on the Fort Meade web site.

## 12. Open Discussion/New Business:

a. Mr. Tibbetts advised that Mr. Lenny Siegel from the Center for Public Environmental Oversight is working on a vapor intrusion paper and would like to talk to any community or Army members to gather information on concerns from this Board. Mr. Tibbetts stated Mr. Siegel had asked him if the Army was doing a good job, and Mr. Tibbetts had responded that Fort Meade was doing a good job in addressing concerns. Mr. Tibbetts said he could provide Mr. Siegel's email to anyone who is interested in contacting him.

b. Mr. Fluck advised the Fort Meade Installation Restoration Program team recently received several awards. Ms. Tegtmeier stated she and several staff from ARCADIS are members of the Society of Military Engineers, and submitted the Manor View Dump Site project to the Engineering Society of Baltimore's award program for Project of the Year. She advised Fort Meade and ARCADIS were awarded one of the Honorable Mention awards. Mr. Fluck advised Fort Meade's Installation Restoration Program also was awarded the Army's Environmental Cleanup Award for 2012-2013. Mr. Fluck noted this is the highest environmental cleanup award the Army offers both nationally and internationally. Mr. Fluck recognized the many individuals who contribute to the environmental cleanup program at Fort Meade, including all the members of the Restoration Advisory Board. Mr. Fluck stated the comments made by the Board members are significant contributions to the process of cleaning up sites which was reflected in the award submission. Mr. Fluck said Fort Meade has submitted a nomination

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package to the Secretary of Defense where Fort Meade will be competing with the other agency awardees.

c. Mr. Fluck mentioned there would be a public meeting on the Proposed Plan for Manor View on Thursday, March 27, at 7 p.m. at the McGill Training Center on Fort Meade.

d. The meeting was adjourned at 9:24 p.m.

MICHAEL P. BUTLER  
Chief, Environmental Division

CF:  
RAB MEMBERS  
FGGM GARRISON COMMANDER  
PUBLIC AFFAIRS OFFICE